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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,123	01/28/2004	Pierre Holzschuh	0514-1105-1	2245

466 7590 01/15/2010

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EXAMINER	
BEKKER, KELLY JO	
ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
01/15/2010	ELECTRONIC

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RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS

AND INTERFERENCES

Ex Parte PIERRE HOLZSCHUH, GEORG BUCH, and

JEAN-JACQUES WEILAND

Appeal 2009-010304
Application 10/765,123
Technology Center 1700

Oral Hearing Held: December 10, 2009

Before EDWARD C. KIMLIN, CHARLES F. WARREN, and MARK NAGUMO, *Administrative Patent Judges.*

APPEARANCES:

ON BEHALF OF THE APPELLANT:

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The above-entitled matter came on for hearing Thursday, December 10, 2009, commencing at 2:04 p.m., at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Todd Brown, a Notary Public.

THE USHER: Good afternoon, Calendar No. 44, Mr. Madsen.

JUDGE KIMLIN: Thank you.

THE USHER: You're welcome.

JUDGE KIMLIN: Good afternoon.

MR. MADSEN: Good afternoon, Your Honor.

JUDGE KIMLIN: Our transcriber today is Todd Brown. If you have business cards for him, he'd appreciate them.

MR. MADSEN: I have with me Andrew Patch.

JUDGE KIMLIN: Pardon?

MR. MADSEN: I have with me Andrew Patch.

JUDGE KIMLIN: Welcome.

MR. PATCH: Thank you.

MR. MADSEN: May it please Your Honors, I will start by explaining the invention as claimed and --

JUDGE KIMLIN: Perhaps you could speak just a little louder?

MR. MADSEN: Sure. I'll go through and explain the invention as claimed and compare the key references for the independent claims.

In general, the claimed invention, as recited in the independent claims, refers to a process for producing a smoked product by pyrolysis. Pyrolysis is the thermal decomposition of organic material. And the claimed invention is introducing organic material into a pyrolysis reactor at one end, and it is being heated by a rotatable heated screw, and it is exiting this device at the

other end and it is referred to as consumed material in the claims. Also, at this other end, the claimed invention is recovering smoke, as defined in Independent Claims 1, 17 and 18.

The pyrolysis reactor is also substantially hermetically sealed, and this, by having the controlled temperature, low oxygen because of the hermetically -- substantially hermetically sealed reactor, is able to minimize carcinogens, as recited in, for example, Claim 19, which refers to, at most, 10 parts per billion of benzo-pyrene and, at most, 20 parts per billion benzo-anthracene.

There are also claims directed to product by-process, and they refer to liquid smoke product, for example, and Claim 13 obtained by this process of Claim 1, in having the same characteristics with the minimized amount of carcinogens.

The references offered for rejecting the independent process claims are based on two primary -- the two primary references are Underwood and Grule (phonetic sp.). As far as Underwood is concerned, this is a fast or flash pyrolysis, which, of course, is different than that which is being claimed.

In order to accomplish this faster flash pyrolysis, Underwood requires temperatures between 400 C and 650 C, and the times are -- the time for conducting this pyrolysis is anywhere from below two or three seconds.

The flash fast pyrolysis is also in an oxygen-deprived environment, and Underwood states that by doing so, he is able to also reduce the carcinogens level. Admittedly, this is a similar result, with respect to one of the carcinogens mentioned, and that's benzo-pyrene.

The Examiner recognizes that -- of course, Underwood does not teach the rotatable heated screw, and offers a combination of Weissman and Lepez to teach this concept.

However, the problem here is, the structure used by Weissman is a conventional smoke generator, and this is not utilizing the high temperatures or the short processing times required by Underwood in order to reach the flash or fast pyrolysis. In fact, it's only being operated at about 200 to 220 degrees Fahrenheit or 104 degrees Celsius and --

JUDGE NAGUMO: Why is that a problem, though?

MR. MADSEN: The problem --

JUDGE NAGUMO: The Examiner seems to suggest that you could use the conveyance, the screw, to introduce the material, and as I understand your counterargument in your Brief was that, well, there's no disclosure of the operating at the higher temperatures. But, I mean, you've got smiths and the like and ovens, and hot ovens, and it seemed to be made out of the same or similar materials. So, I didn't understand your argument.

MR. MADSEN: Your Honor, in the primary reference, we're starting with no -- sort of no extrusion or rotatable screw type of arrangement. We're dealing with simply a vacuum type, a fluidized bed type, or a rapid thermal process, which includes exposing the product to hot articles, such as sand.

And the references cited by the Examiner in the case of Lepez, which is the temperature issue we're talking about, they suggest using plastic material.

JUDGE NAGUMO: Oh, but we don't take the precise materials and everything. We're taking the concept and introducing -- I mean this is how I understand the Examiner's rejection -- you've got a screw conveyor that can

be heated with an electric current, and we can use this to introduce our material into a flash pyrolysis unit, and I mean --

MR. MADSEN: Yes.

JUDGE NAGUMO: -- if you put in a plastic screw, you're not going to be able to heat it, but the Examiner points out that you can have an electrically-conductive screw, and so the temperature problem seems to go away. I still don't understand the basis of your objection here.

MR. MADSEN: Well, with the Lepez reference, they're describing drying a roast, which is essentially removing moisture from the product. So they're not looking at high temperatures. Also, with the Weissman, they're also not looking at high temperatures.

JUDGE NAGUMO: But they're talking about introducing material into a pyrolysis chamber with a screw conveyance. Why is that so non-obvious, just because they're talking about lower temperatures? If they were talking about higher temperatures, you're dealing with anticipation or something close to it.

MR. MADSEN: Well, it's the combination, Your Honor, of the temperature, as well as the structure, because if -- with Weissman, we recognize that Weissman requires air to convey the volatiles out of this unit.

And if we look at the primary reference, Underwood, Underwood does not want oxygen. He's operating in an oxygen-deprived environment.

JUDGE NAGUMO: Does the Weissman conveyance mechanism require an open chamber? I mean it's --

MR. MADSEN: Yes, Your Honor. It -- what Weissman uses is actually a central duct.

JUDGE NAGUMO: No, no. The Weissman conveyance means the screw. Is that --

MR. MADSEN: The screw itself, Your Honor --

JUDGE NAGUMO: Is that required to operate --

MR. MADSEN: -- does not require the --

JUDGE NAGUMO: -- in a -- well, then, again, I'm -- the Examiner didn't propose to use all of Weissman or Lepez and put the whole thing bodily into Underwood.

MR. MADSEN: Yes.

JUDGE NAGUMO: So, again, I'm not quite getting your argument, what is so faulty about the Examiner's proposed combination.

MR. MADSEN: The other aspect, structurally, Your Honor, is that we're claiming that in Claims 1, 17 and 18, that the material, the spent material, is being removed at the end opposite from the end that the organic material enters. And, also, the smoked product is being recovered at that same end and --

JUDGE NAGUMO: Well, the Claim 1, the last clause of it, says, recovering the produced smoke from the other end of said at least one screw.

It seems to me that if I recovered any smoke that's produced at the far end and away from where material enters the chamber, then I'm meeting the claim.

I don't see why I have to read this limitation as every bit of smoke that I recover from this chamber can only be recovered from the end of the screw. And because I'm preferring to read the claim broadly.

MR. MADSEN: I understand.

JUDGE NAGUMO: And reasonably, in light of the disclosure. And is there anything in the disclosure that you can direct me to that would put me away from my broader reading? In other words, if I take anything, any of the smoke from this end, the far end, I've met that limitation.

MR. MADSEN: Your Honor, as far as particularly pointing out where it's recovered, there's only one section in the specification that I can think of. And it refers to the end of the screw -- or, sorry -- it refers to the end of the rotatable screw.

However, with the Weissman reference, they're speaking of removing the volatile product through the top.

JUDGE NAGUMO: But, as I said, it seems to me they get -- they recover smoke from the entire length of the screw. I mean wherever smoke's coming up, it's rising and it's being collected.

MR. MADSEN: Right, right.

JUDGE NAGUMO: Why isn't that meeting this limitation, read the way I'm reading it anyway, that as long as I'm collecting smoke from the far end of the screw, I'm meeting that limitation?

MR. MADSEN: You're recovering it from the end.

JUDGE NAGUMO: I'm recovering some smoke that's originating from the end of the screw.

MR. MADSEN: Recovering the produced smoke --

JUDGE NAGUMO: Right.

MR. MADSEN: -- from the end of the screw.

JUDGE NAGUMO: Right. I'm recovering some. And Weissman is recovering some from that end of the screw.

MR. MADSEN: Weissman is directed to removing it from the top. Weissman may remove some from the screw.

JUDGE NAGUMO: And why doesn't that meet this limitation? There's no exclusionary language, I can see, if it says you collect it only from the end of -- the only smoke you collect is collected from the end. I don't see that in the claim. Where -- I mean, where do I find that in the claim, in your view?

MR. MADSEN: It does not recite only. It does not.

But with the combination, looking at Underwood, if Underwood is interested in obtaining a flash for fast process for pyrolysis, the question is: can one obtain the fast or flash via the conventional systems that are taught by Weissman and Lepez?

JUDGE NAGUMO: And where is this argument presented in the Brief?

MR. MADSEN: It is -- Your Honor -- and the statement, Your Honor, is at the first full paragraph on page 12, the conclusion. And the comment made is, that is, the screws require low temperature and an air supply, and there would have been no expectation of success because Underwood discloses that without fast or flash methods in the oxygen-starved environment, one obtains lower smoke yields and higher levels of benzo-pyrene.

JUDGE NAGUMO: Well, I see the argument there about low temperature and air supply, but I don't see where either of the screw references suggest, or would suggest to one of ordinary skill in the art that a screw supply mechanism is necessarily limited to low temperature or to a chamber and that it has an oxygen-limited air supply.

MR. MADSEN: As the reference is cited, Your Honor, the temperatures taught in Weissman are very low, and --

JUDGE NAGUMO: Yes, they're very low. That's not -- I don't understand the Examiner to have taken the entire process, or entire apparatus, of either reference and tried to incorporate all of that, including the desired processing conditions --

MR. MADSEN: In order --

JUDGE NAGUMO: -- and to Underwood.

MR. MADSEN: Excuse me, Your Honor. In order to achieve a fast or flash pyrolysis, an arrangement similar to that proposed by the Examiner, it does not suggest less than two or three seconds, for example.

JUDGE NAGUMO: Well, that's what I'm asking. Where is that argument presented in the Brief?

MR. MADSEN: With respect to the time? The argument begins, Your Honor, on page 10, stating that Underwood discloses fast or flash pyrolysis methods at high temperature, e.g., of 400 C, combined with short residence times, and, e.g., three seconds, at most.

And, as explained, the paragraph continuing on page 11, Underwood discloses that the advantages of these methods over conventional methods includes a higher smoke yield and a very low level of benzo-pyrene, a known carcinogen. Then, on the second to last paragraph, Weissman discloses a conventional smoke generator, at temperatures far below those of Underwood, and then the conclusion, as I had referred to before, regarding faster flash methods.

JUDGE NAGUMO: Maybe if you could tell us a little bit about the other rejection based on Grule?

MR. MADSEN: Yes. Okay, on -- for Grule, Grule is using a paralysis method to obtain a catalyst, a carbon-based catalyst. And the combination is Grule does teach a rotatable screw. And the Examiner relies on Lepez to teach the heating of the screw. And the combination, as we had argued, one would have been discouraged from making this combination because these are unrelated and the fact that, as mentioned before, Lepez is focused on drawing and roasting, and Grule is focused on creating this catalyst by this thermal decomposition. And there is no teaching for a specific temperature range, as disclosed or as claimed, and the combination again does not teach that you are removing the consumed material and covering the smoke at the end opposite from the introduction.

And another point is the convention of Grule is the volatiles or the smoke products of those are accumulated within the apparatus, and for that reason, it appears that they're of no interest, they're a byproduct and they're not being recovered at the end because of the discussion of it being accumulated. In fact, they also discuss having these products burnt for potential recovery.

JUDGE NAGUMO: I have no further questions.

JUDGE KIMLIN: No further questions.

Well, thank you for coming, Mr. Madsen.

MR. MADSEN: Thank you very much, Your Honor.

Whereupon, the proceedings, at 2:26 p.m., were concluded.